



# ELECTRICAL CURRENTS

Newsletter from the Office of the Chief Electrical Inspector

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## ● New Electrical Board Members Appointed

In the spring and summer we announced recruitments for Electrical Board positions opened by normal expiration of terms, retirements, and the addition of an Outside Line Worker position. Governor Gregoire appointed the following individuals to serve four-year terms as Electrical Board members. Tracy Prezeau was appointed to one of the three Electrician Seats, David A. Bowman, P.E., RCDD, was re-appointed to the Licensed Professional Electrical Engineer Seat, Fred Tricarico was re-appointed to the Telecommunications Worker Seat, Dave Gough was appointed to one of the three Electrical Contractor Seats, and Don Guillot was appointed to the new Outside Line Worker Seat.

The Board elected Gloria Ashford, Electrical Contractor Seat, as Chair and Jim Simmons, Electrical Contractor Seat, as Vice Chair. The remaining members of the Board are: Philip Parker, Electrician Seat; Michael Hendrix, Electrician Seat; Geoffrey Newman, Telecommunication Contractor Seat; Don Kopczynski, Electrical Utility Seat; David M. Jacobsen, Telecommunications Service Provider Seat; David S. Bowman, Manufacturer/Distributor Seat; Lea Wilson, General Public Seat; and Tom Phillips, Municipal Building Official Seat.

## ● More Class B Installation Label Information

The worker performing the installation must affix a Class B installation label on the cover of the panelboard or overcurrent device supplying power to the circuit or equipment **prior to beginning the work**. After November 25, 2005 when the use of these labels is expanded to specific limited energy systems, telecommunications, and thermostat installations, the labels may be appropriately installed on the limited energy control panel, telecommunications equipment, or HVAC unit equipment controlled when the other locations are non-existent or remote.

The contractor portion and job site portion of the label must include the following information:

DATE OF WORK

SITE ADDRESS, CITY, COUNTY

ELECTRICAL CONTRACTOR'S NAME

SITE OWNER NAME AND CONTACT PHONE #

ELECTRICAL CONTRACTOR'S LICENSE #

DESCRIPTION OF WORK

INSTALLING ELECTRICIAN'S CERTIFICATE #

The electrical contractor must return the contractor's portion of the label to the Department of Labor and Industries, Electrical Section, P.O. 44460, Olympia, WA 98504-4460 **within fifteen working days after the job site portion of the Class B installation label is affixed**.

## ● Who Can Use Class B Labels?

Homeowners and business property owners may **not** use Class B installation labels. Licensed electrical and telecommunications contractors may purchase and use these labels only on eligible work. Additionally, after receiving permission from the Chief Electrical Inspector, health care, and large commercial or industrial facilities using appropriately certified electrician employees for eligible electrical work may purchase and use Class B labels.

## ● Damaged Wires In Appliances Or HVAC Equipment – Class A Or Class B Work?

Electrical conductors in appliances, refrigeration, or HVAC equipment rarely fail due to a manufacturing defect. A wire failure is usually the result of physical damage. A defect in a related electrical device within equipment can cause overheating and insulation or terminal failure of an internal conductor. In either case, a certified electrician making a field judgment to repair a damaged wire is responsible for identifying and abating the original cause of the damage.

Wiring within equipment is **not** a "component" unless the wire itself is a manufacturer's replacement part or factory-attached wire lead integral to a replacement part. If a damaged wire meets this specific requirement, replacement is Class A basic electrical work. Permits are not required for Class A work.

Effective November 25, 2005 the like in kind replacement of internal wiring in appliances, refrigeration, or HVAC equipment that is not the manufacturer's replacement part will become Class B basic electrical work and be inspected on a random basis. Coupled with the requirement to be a licensed electrical contractor using an appropriately certified electrician, the Class B inspection method ensures that the installation conforms to appropriate safety standards.

Equipment must be returned to the original conditions of its listing when manufactured. Operating conditions like vibration, high ambient temperature, moisture, etc. dictate that replaced internal wiring must have the same size, stranding, insulation type, terminal configuration, and performance characteristics (e.g. press-on terminal lugs cannot be substituted for terminal eyes). An electrician doing this type of Class B work should try to find a way to leave some evidence of the original part available on the job site for comparison in case the work is inspected.

### ● **Appropriate Fittings For Electrical Nonmetallic Tubing**

Electrical nonmetallic tubing (ENT) is made of the same material used for rigid nonmetallic conduit. The outside diameters of ENT are compatible with standard connectors, couplings, and outlet boxes for rigid PVC. Installation instructions are provided with each bundle or coil of ENT outlining the procedure to be used when using cemented-on PVC conduit fittings and outlet boxes. These instructions include requirements for a specific cement to be used as well as the application method. None of the other grades of PVC cement may be used with ENT because they contain a higher percentage of solvents and utilize a dauber-type applicator to hold more cement. A brush applicator is supplied with the ENT cement and should be used to get the proper (lesser) amount of cement on the conduit to ensure the thinner walls are not degraded.

Cemented-on fittings or mechanical fittings identified for the purpose are suitable for use in poured concrete. When the product carton is marked "CONCRETE TIGHT WHEN TAPED" a fitting must be taped completely at the raceway to box fitting junction or raceway to raceway junction. NEC 362.12 prohibits the use of ENT for direct burial in the earth.

### ● **Why Can't ENT Be Installed Outdoors?**

ENT was designed as an in-building product. Unlike rigid nonmetallic PVC conduit, ENT does not have ultraviolet (UV) inhibitors added to the PVC compound. It is adversely affected by the UV rays from the sun. ENT is factory-packaged in an opaque wrap to protect the product from such exposure. Contractors that use this product know from experience that unprotected outside storage of ENT may result in brittleness in as little as 3-4 months.

### ● **Circuits Supplying Gas Furnaces**

A gas furnace is not a "portable appliance" or equipment requiring "frequent interchange", nor does it meet any of the other conditions of use for flexible cord wiring methods. NEC 400.8 states *"flexible cords and cables shall not be used as a substitute for the fixed wiring of a structure."* Although some installers attempt to use this as a quick, inexpensive method to make a power connection, flexible cords can not be used as the wiring method for connection of a gas furnace to its branch-circuit.

NEC 422.12 places additional requirements on a branch-circuit for a gas furnace. This article requires, *"Central heating equipment other than fixed electric space-heating equipment shall be supplied by an individual branch circuit."* An exception allows auxiliary equipment directly associated with the heating equipment, such as pumps, valves, electrostatic air cleaners, and humidifiers, to be connected to the same branch circuit.

### ● **Electrical Question of the Month**

**This Month's Question:** What is the maximum fine for violation of any of the provisions of the RCW that apply to electricians and electrical installations? **A)** \$500, **B)** \$1000, **C)** \$5000, **D)** \$10,000.

**Last Month's Question:** The job site portion of the label for a Class B installation must include: **A)** Building owner's name, **B)** The job site address, **C)** Date of the work, **D)** Contact telephone number. The answer is: **A), B), C), and D).** [You need to have a Class B label in your possession to get the answer right. All of this information is required to be filled out on both the contractor portion and the job site portion of the label.]